

THE
OPHTHALMOSCOPE

A MONTHLY REVIEW OF CURRENT OPHTHALMOLOGY.

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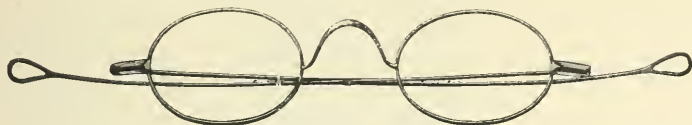
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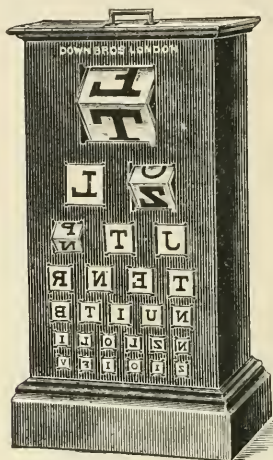
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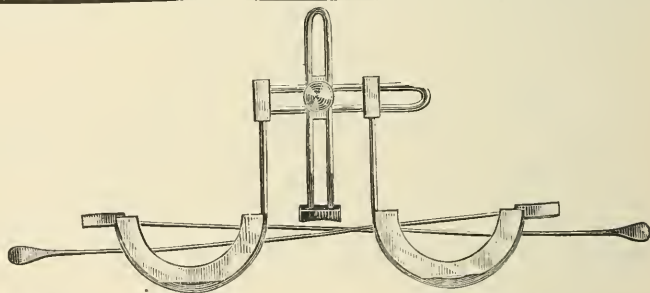


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ORIGINAL COMMUNICATIONS.

THE MIDDLEMORE LECTURE, 1903.

BACTERIAL DISEASES OF THE CONJUNCTIVA.

By JAMESON EVANS, M.D., F.R.C.S.,

SURGEON TO THE BIRMINGHAM AND MIDLAND EYE HOSPITAL.

Our knowledge of the bacteriology of the conjunctiva in health and disease is as yet not very exact. Much work has already been done in this direction, but a large amount of it requires further sifting and revision before it can be included in the category of established facts.

The conjunctival sac is conveniently situated for making bacteriological investigations, but it is also peculiarly adapted for the reception of numberless microbes from the air and from the nose and neighbouring cavities. These bacteria very often bear no relation to diseases of the eye and they complicate

and vitiate the results of bacteriological investigations. For this reason it is often impossible to tell which organism is at the root of a certain disease without making experimental inoculations of pure cultures of the isolated organisms. For clinical work, however (as opposed to research work) a very limited outfit will serve for all practical purposes. The following, with a good microscope and oil immersion lens, is a good selection to have, and will be found of considerable service in the diagnosis of conjunctival diseases :—

1. Spirit lamp.
2. Slides and cover glasses.
3. Platinum loop.
4. A few small pillboxes.
5. Filter papers.
6. Stains and reagents.
 - (a) Methylene or Thionin Blue.
 - (b) Carbol-Gentian Violet.
 - (c) Gram's differential solution.
 - (d) Bismarck brown (Vesuvine).
 - (e) Methylated spirit or absolute alcohol.
 - (f) Neisser's stain.
 - (g) Carbol Fuchsin.
 - (h) 20% sulphuric acid.
 - (i) Xylol Balsam.
 - (j) Cedar oil.

If further investigation is necessary :—

7. Culture tubes of Agar Agar, Blood Serum, Blood Agar, and Gelatine.

With such an outfit, a ready diagnosis can be made of the Koch-Weeks' Bacillus, Morax-Axenfeld Bacillus, Pneumococcus, Gonococcus, Staphylococcus, Streptococcus, Klebs-Loeffler Bacillus (with a fair degree of certainty), Tubercle Bacillus, and the Xerosis Bacillus. Make at least three films on cover glasses or slides by drawing the platinum loop (previously brought to a glow in the spirit lamp and allowed to cool) along the lower conjunctival fornix, or wherever secretion accumulates, and spreading the adherent matter on the cover glass or slide. Let the film dry and then pass it two or three times through the flame to fix it. Stain one with methylene blue or dilute fuchsin for two or three minutes and the other by Gram's method. The third acts as a reserve, or can be used for special stains—*e.g.*, Neisser's. These organisms represent the bacteria most likely to be met with in the eye, and if organisms other than these are met with, further investigation must be carried out by means of cultures and experimental inoculations.

The bacterial origin of many diseases of the conjunctiva

is already well established. I propose now to consider only those which have a fair claim to be considered as bacterial diseases. These include :—

1. Catarrhal conjunctivitis.
2. Gonorrhœal conjunctivitis.
3. Diphtheritic conjunctivitis.
4. Tubercular conjunctivitis.

Other diseases, *e.g.*, trachoma and possibly xerosis, have been regarded as, and, in all probability are, of bacterial origin, but as the specific organisms have not been definitely isolated, I shall not stop to discuss them.

The practical importance of bacterial diseases of the conjunctiva is shown by the fact that they formed 10 % of all cases treated at this hospital last year, and if minor accidents ("foreign bodies") and errors of refraction are excluded from the total, they amount to 25 % of eye diseases attended to.

I will take first the most common of all eye diseases, *viz.* :—

CATARRHAL CONJUNCTIVITIS which is also known as contagious ophthalmia, and popularly as "blight" and "pink eye". It is usual to classify this disease into acute, subacute and chronic. For clinical purposes this, no doubt, has some advantages, but such a classification has no ætiological basis. Experience has shown that the same microbe may give rise to any of these clinical types, and clinically similar appearances may be due to distinctly different organisms. Further, a subacute or chronic case may, by contamination of another conjunctiva, give rise to the acute form and *vice versâ*. It has also been advanced that a diplobacillary conjunctivitis may be transformed into a Week's bacillus conjunctivitis (Stephenson).

The symptoms of this disease are briefly :—

1. Subjective sensations, *e.g.*, feeling of grit in the eyes, photophobia, gluing of the lids together by secretion, and occasional disturbance of vision owing to the discharge adhering to the cornea.
2. Increased and usually altered secretion.
3. Changed appearance of the conjunctiva, varying from slight injection or velvety thickening to the formation of false membrane.

In the *severer* forms the injection and swelling of the conjunctiva are pronounced, and invade the bulbar as well as the palpebral conjunctiva, and small hæmorrhages into the conjunctival tissues may be noticeable. The lids are often swollen and red. The secretion is at first mucous or mucopurulent, but later becomes more purulent than mucous. The eyes are hot and heavy and feel as though full of sand.

There is no marked degree of photophobia unless there are corneal or iridic complications. When the secretion adheres to the cornea, it gives rise to dimness of vision and to coloured rings round gaslights.

In the *mild* form, the redness is confined to the palpebral conjunctiva, caruncle, the margin or angles of the lids (angular conjunctivitis). The secretion is barely visible during the day, but in the morning it causes a stickiness of the lids which indicates its presence. The subjective symptoms are slight and troublesome only in artificial light.

Complications are rare in this disease, but small ulcers of the cornea (catarrhal ulcers) may occur, and very occasionally iritis may be associated with them.

ÆTIOLOGY: The following organisms may be concerned in the production of this disease:—

1. Koch-Weeks' bacillus.
2. Pneumococcus of Fraenkel.
3. Morax-Axenfeld diplobacillus.
4. Staphylococcus.
5. Streptococcus.

I propose to discuss each of these organisms as to:—

- (a) Morphological characters.
- (b) Methods of staining and cultivation.
- (c) Evidence of their relation to the disease.

1. THE KOCH-WEEKS' BACILLUS is a small bacillus resembling that of influenza. It varies from 1μ to 2μ in length and is 0.25μ in thickness. It is rounded, and generally very slightly swollen at the ends. In agar cultures the bacilli may be arranged in long threads in which the division lines are very indistinctly marked.

It stains well with watery aniline dyes, *e.g.*, methylene blue, gentian violet, and fuchsin though not so deeply as cocci and the bacilli generally met with. It does not retain the stain in Gram's method.

It grows best on serum agar at 35°C. , but it will also grow on agar ($\frac{1}{3}$ to $\frac{1}{2}\%$). After 48 hours or so, small, pearly, glistening growths appear on the surface of the agar, and if the medium has been stabbed, a slight haziness appears along the track of the needle. Degeneration soon sets in, and at the end of a month the bacilli have disappeared. Perfectly pure cultures are difficult to get, owing to the almost invariable presence of a vigorously growing but inert clubbed bacillus.

Inoculation experiments with growths of this bacillus (mixed with the clubbed bacillus which has been shown to be inert) on the human conjunctiva produced an acute catarrhal conjunctivitis similar to that from which the cultivation was obtained.

The disease has an incubation period of 36 to 48 hours. It has been found that the number of bacilli present on a film varies according to the acuteness of the conjunctivitis. A large number of bacilli in a preparation indicates a severe attack. In the very severe cases, suggestive of purulent ophthalmia, and especially where there is a membrane formation on the conjunctiva, it is associated with the presence of the streptococcus longus (Stephenson).

Weeks considered that the presence of a yellowish discharge, accumulating in thick masses at the inner canthus, was characteristic of the conjunctivitis due to this bacillus. The bacilli can be found as long as the yellow discharge persists. The Weeks' bacillus is probably the most frequent cause of acute epidemic contagious ophthalmia in this country.

2. THE PNEUMOCOCCUS OF FRAENKEL is a small oval coccus about 1μ long, generally arranged in pairs—diplococcus—but very often also in chains of four to ten. The free ends are often pointed like a lancet, hence the name "diplococcus lanceolatus" which has been applied to it. It is often surrounded by a capsule. It stains with weak aniline dyes, e.g., methylene blue and carbol-fuchsin. It retains the stain in Gram's method.

The capsules, which are only seen in film preparations, and not in organisms grown on artificial media, appear as unstained halos by ordinary methods. They may be stained by bringing the carbol-methylene blue up to a high temperature instead of using it cold, as recommended by Stephenson, or by Johne's plan*, or by the method of Welch and Muir.

It grows at 37° C. on —

1. Alkaline agar.
2. Blood serum or blood agar.

Its growth is not vigorous. In stroke cultures it appears as a translucent pellicle along the track with isolated colonies at its margins. In stab cultures at 22° C. it appears as a row of minute points, which remain of small size and do not liquefy the jelly. The cultures degenerate after a few days and lose their pathogenic activity with age. No capsules are developed in any of the artificial media.

Experimental conjunctivitis has been produced by inoculation of the human conjunctiva with pure cultures of the pneumococcus (Gifford).

* Johne's Plan for Capsules of Pneumococcus :—

1. Stain in 2 per cent. (watery) gentian violet held over the flame until steam arises.
2. Wash with distilled water.
3. Immerse in 2 per cent. acetic acid for few seconds.
4. Wash.
5. Mount in a drop of sterile water.

Clinically, there does not seem to be any marked or striking feature by which pneumococcus conjunctivitis can be distinguished from acute or subacute conjunctivitis due to other organisms. In some cases the disease appears as an acute and contagious form, giving rise to epidemics—generally among children—whilst at others it is mild and appears not to be contagious. Gasparini and Stephenson consider that the appearance of a pellicle of fibrin on the palpebral conjunctiva is characteristic of pneumococcus conjunctivitis.

(To be continued.)

A CASE OF HYDATID CYST OF THE ORBIT.

By

C. DEVEREUX MARSHALL, F.R.C.S.,

ASSISTANT SURGEON TO THE ROYAL LONDON OPHTHALMIC HOSPITAL, CITY ROAD, E.C., AND OPHTHALMIC SURGEON TO THE VICTORIA HOSPITAL FOR CHILDREN, CHELSEA.

The patient in whom this rare condition was seen was a child Ethel W., aged 5 years, who had lived in the country near London all her life. She was first seen by me at the Moorfields Hospital in October, 1902. The history was that the right eye had turned upwards for about eighteen months, but that it had become more displaced lately. She was admitted on October 7th and the condition then was as follows : between the right eyeball and the inferior margin of the orbital cavity, with its most prominent part at the junction of the outer fifth with the inner four-fifths of the inferior orbital margin, is situated a tumour. The tumour, as much of it as can be felt, is of the size of a muscatel-grape, and of about the same consistency and shape ; it appears to be fluctuating, but owing to the yielding nature of the orbital tissues, this point is difficult to be certain about. The displacement of the eyeball has been caused by the pressure of the tumour in a direction inwards and upwards ; not only however is the eye on a higher plane than on the left side, but it is apparently rotated slightly upwards and inwards. The movements of the globe are free although less than normal, but the outward and downward movements are those which are apparently the most restricted. The right eye appears

to be healthy, and the pupil is active. The amount of vision is difficult to estimate, although a penny which is easily recognised with the left eye, is apparently not so with the right. The left eye is normal.

On October 8th an incision was made through the lower lid over the tumour, and a fluctuating swelling exposed. An attempt to remove the growth in its sac resulted in the rupture of the capsule, followed by collapse. Clear fluid escaped. The remaining sac was easily shelled out; it was white and had no adhesions. The wound healed, and the child was discharged a week later. On November 6th the eye had returned to its normal level; there was, however, slight deviation inwards and upwards. The vision of the right eye appeared to be good. There was no evidence of hepatic disease or enlargement.

On pathological examination the cyst was found to be about $1\frac{1}{2}$ inches in diameter; its wall was thick, pearly white, and smooth on both surfaces. It has all the characteristics of a hydatid cyst. There were no echinococcus heads in it. On microscopic examination, the cyst wall showed typical lamination.

A message was received from the child's father, dated January 31, 1904, stating that the child was quite well and had suffered no inconvenience since the operation.

Remarks.—This case resembles most of the others that have been recorded in the fact that the cyst appears to be sterile and does not contain daughter cysts or scolices. Lawford (1) explains this as being due to the conditions under which the cyst grows. "Situated in a cavity with bony walls except in front, their increase in size leads at an early stage to so much displacement of the eyeball, that surgical interference becomes necessary before the parasite has begun to proliferate." Leuckart (2) states that "It has been repeatedly observed that in certain localities the echinococci are much more frequently sterile than in others. It is also well known that the presence of heads and hooklets is noted in only a small minority of cases of human echinococci."

Published records show that a large number of these cases occur in children, and they appear but rarely in persons above 40 years of age.

The length of time that these cases take to develop show considerable variations. In cases recorded by McGillivray, Rockliffe, and Lawson, the symptoms had been present for from six to eight years; while Weeks had a case in which eight days only had elapsed from the onset of the symptoms before surgical interference was adopted.

The symptoms are chiefly to be ascribed to a mechanical

cause, viz.: a tense cyst, growing in a more or less closed cavity, which, of course, caused displacement of its contents, and if left long enough, optic neuritis and œdema of the fundus will be the result. In the present instance nothing of the sort occurred, and even if the vision were affected, which is very doubtful, it soon recovered after the removal of the cyst.

With regard to treatment, although puncture of the cyst has been resorted to in many instances, yet it never does much good, as the cyst simply fills up again. Extirpation of the entire cyst is the only operation that should be attempted. In former times incision with drainage of the sac, leading to suppuration and obliteration, has been recommended, but this method may be regarded as belonging to a bygone age, and no modern surgeon would be inclined to risk his patient's life by producing suppuration anywhere, while everyone knows the great danger that lurks in a suppurating wound of the orbit. The facility with which the operation of extirpation can be done is remarkable, for provided that inflammation has not taken place, the cyst shells out with the greatest possible ease, after it has been emptied. One has only then to grasp it with forceps, and it at once comes away, as if it had never contracted adhesions at all. The sooner the cyst is removed the better, as nothing but damage, more or less permanent, can result to the delicate tissues of the orbit if it be left.

These cases are so rarely seen that it falls to the lot of but few surgeons to operate upon more than one or two in the course of a lifetime. The text-books do but little more than give passing mention that such a thing may occur, and many do even less than this and do not refer to them at all.

When Lawford's excellent and exhaustive paper was published in 1895, he was unable to find reference to more than 45 other cases that had been published. Since then others have been seen, and (3) Cabaut has collected 75 cases, 35 of which occurred in Argentina, but the condition is sufficiently uncommon to be reckoned among the rarities of surgery. There is one other situation however, in which it is still less common to find the cyst, and that is in the eyeball itself. Only three cases of this condition are known to me, and there exists some doubt with regard to the nature of the first two. One was published by Hill Griffith in Volume XVII of the *Transactions of the Ophthalmological Society*; another case was published by Gescheidt in 1833 in *von Ammon's Zeitschrift f. die Ophth.*, Bd. III, page 437; and the third was recorded by Louis Werner, of Dublin, in an exhaustive paper published in Vol. XXIII. of the *Transactions of the Ophthalmological Society* (see OPHTHALMOSCOPE, Vol. I (1903), p. 226).

These cases of parasitic cysts in and about the eye are of sufficient rarity to justify their publication, and one cannot but help being struck with the successful results sometimes obtained through treating them on general surgical principles.

REFERENCES.

- (1) Lawford.—*Trans. Ophthal. Society*, Vol. XV (1895), p. 167.
- (2) Leuckart.—*Parasites in man*, 1865.
- (3) Cabaut.—*Woch. f. Therapie und Hygiene des Auges*, February 25, 1904.
(For abstract see page 147 of the present number of OPTHALMOSCOPE.)

ETHYL CHLORIDE AS A GENERAL ANÆSTHETIC IN EYE WORK.

By

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Few ophthalmic surgeons appear yet to realise what an extremely valuable general anæsthetic they possess in ethyl chloride, an agent now widely employed in general surgery. Dr. Camille Fromaget (*Annales d'oculistique*, 1901, p. 196) appears to be the only author who has written upon the subject. He has given the anæsthetic in more than one hundred cases without mishap. The ethyl chloride was administered by spraying the liquid upon a piece of cotton wool, enclosed in a cone made from a handkerchief having paper between its folds. Fromaget condemns more formal apparatus in no measured terms.

Ethyl chloride has several distinct advantages over all the older anæsthetics. For example, it is easy to give, anæsthesia is quickly induced, and its effects pass away rapidly. Cyanosis or jactitation, such as often occurs with nitrous oxide, is not seen with ethyl chloride. Vomiting is not a very common complication, and seems to occur only when an over-dose of the anæsthetic has been administered. Lastly, no death has yet been reported in this country from ethyl chloride. Seitz (*Lancet*, April, 1903, p. 953), who ranks ethyl chloride next to nitrous oxide in point of safety, gives the death-rate as 1 in 16,000 administrations.

From an ophthalmic point of view, ethyl chloride is an almost ideal anæsthetic. The writer has employed it on upwards of two hundred occasions in both children and adults, and the farther his experience extends, the greater is his appreciation of the new agent.

For what purposes is ethyl chloride especially useful in eye work? In the first place, for examinations such as must often be made in the out-patient department, more particularly of children's eyes. In those common and distressing cases of intense photophobia in young children, due to eczematous keratitis, the anæsthetic acts admirably, administration, examination, and recovery being a matter of a few minutes only—five at the most, a most important practical point in a busy out-patient room. The writer has sometimes thought, too, that he could trace a connection between the giving of the ethyl chloride and the bettering of the photophobia, but that would naturally apply also to anæsthetics other than the one under discussion. To facilitate examination of the eye with the ophthalmoscope in refractory children the agent is most useful. The unruly child is simply taken into the nurse's arms, placed in a convenient position with regard to the lamp, and the anæsthetic is administered. The period of insensibility is quite long enough, even with a single dose, to allow one to examine both fundi with the ophthalmoscope, and even, if necessary, to introduce a speculum, and to steady the eyeball with fixation-forceps. Another field for the employment of ethyl chloride lies in the examination of the cornea in patients suffering from gonorrhœal ophthalmia. The parts are then so exquisitely painful as to render a complete investigation without a general anæsthetic almost a practical impossibility. Yet it is obviously a matter of prime importance to ascertain whether the cornea is or is not ulcerated. With regard to the performance of operations under ethyl chloride, any one of the minor procedures may be undertaken. Thus, the writer has passed lacrymal probes, opened abscesses, extirpated Meibomian cysts, slit the outer canthus, "expressed" the conjunctiva, tapped the aqueous humour, cauterised corneal ulcers, punctured the vitreous, needled the lens and so-called "secondary cataracts," and divided the recti muscles under its influence. Of the larger operations, he has eviscerated and removed the eyeball under ethyl chloride anæsthesia. In brief, from a purely practical standpoint, he believes the new anæsthetic to be speedy, safe, and almost free from unpleasant complications, and to be eminently suited for such examinations of, or operations on, the eye as do not occupy much time. Lastly, he would emphasise the several facts that ethyl chloride is easy to give, pleasant to take, not expensive, and the apparatus is neither cumbersome nor complicated. As to the last point, a most excellent and economical inhaler has recently been introduced by Messrs Duncan, Flockhart, & Co., of Edinburgh, under the name of the "Simplex Inhaler."

SYDNEY STEPHENSON.

There can be no question but that the introduction of ethyl chloride as a general anæsthetic will prove a great boon in all branches of surgery which include minor operations, and of these none is more important than ophthalmic surgery.

The surgery of the eye and eyelids includes many operations which can be performed with an available anæsthesia not exceeding two minutes in duration—cases in which deep anæsthesia is induced, the mask removed, and the operation performed without any further administration.

It is for this class of case that ethyl chloride is so admirably adapted, by reason of (1) its rapid induction, (2) the quiet type of anæsthesia induced, (3) the ease and safety with which it may be given to patients of all ages and all types, (4) its comparative freedom from distressing after-effects, and (5) the absence of unpleasant odour in the room.

Take, for example, a single type of case from these enumerated by Mr. Stephenson, *viz.*, the extirpation of a Meibomian cyst from the lid of a nervous and fractious child. Gas, gas and oxygen, or gas and ether are unsuitable anæsthetics for this kind of operation, and until the introduction of ethyl chloride there was no alternative to the administration of chloroform. Now, in comparing the use of chloroform and ethyl chloride for this particular class of case it is important to bear in mind that the induction of anæsthesia by chloroform presents exactly the same dangers when given for a minor as for a major operation, and it must be given in the same way and with the same care; much time is often unnecessarily wasted, and the patient is subjected to a risk which is not warranted by the short space of anæsthesia which is required.

In the case of ethyl chloride a single dose is administered, which will certainly within a few seconds induce the necessary anæsthesia, but which is not sufficient to kill. The type of narcosis induced is as quiet and as satisfactory in every way as that of chloroform, and after-effects are either altogether absent or are much more transient than those produced by chloroform.

If unforeseen difficulties in the operation occur, it is easy to administer more ethyl chloride or to continue the anæsthesia by means of chloroform.

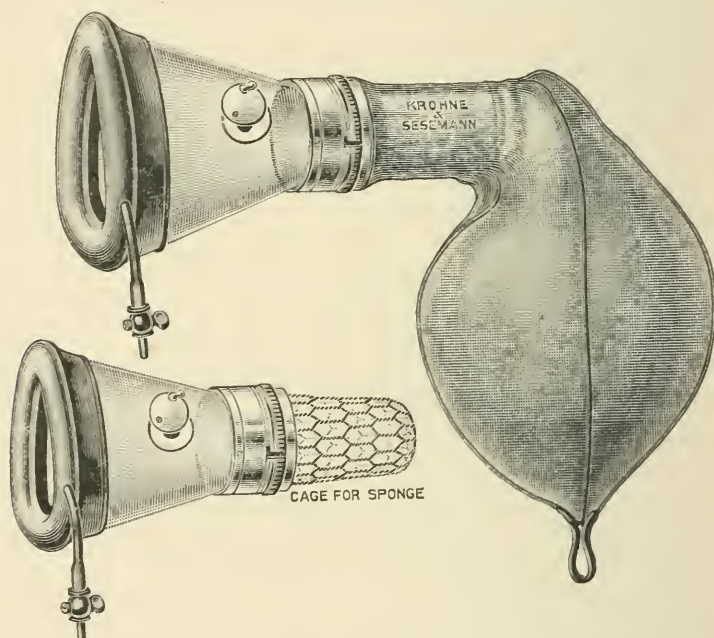
The rapidity with which anæsthesia can be induced with ethyl chloride is equally striking in the case of adults, even in those of powerful build and of alcoholic tendencies, and for this reason it is exceedingly useful as a preliminary to chloroform for operations of longer duration.

There are several varieties of ethyl chloride in use, but none is better than that made by Messrs. Duncan and Flockhart, of Edinburgh, and called by them "Chloryl Anæsthetic,"

or the Kélene of the *Société Chimique des Usines du Rhône*, Lyons, France.*

The dose required for the induction of anæsthesia varies according to the age and type of the patient. In a young child complete anæsthesia can be rapidly induced with from 2 cc. to 3 cc., whereas to produce the same effect in the same time in the case of a powerful man 6 cc. to 7 cc. should be used in one dose.

As regards apparatus, the best and simplest is the slightly modified Ormsby's ether inhaler, made by Messrs. Krohne and Sesemann, of which a sketch is shown.



This inhaler has a metal collar which can be adapted to masks of varying sizes; and these masks are made rather deeper than those of the ordinary type, so that the sponge is at some distance from the patient's nose, a precaution which in the author's hands seems entirely to prevent any feeling of suffocation.

The actual administration with this form of apparatus is very simple. The necessary dose is sprayed on to the sponge, the mask is applied closely to the face, and one inspiration allowed with the air-slot open; this is then closed and no further air admitted until anæsthesia is complete, as shown by snoring respiration, insensitive corneæ, and flaccid limbs.

J. H. CHALDECOTT.

* English Agents: R. W. Greeff and Co., 20, Eastcheap, London, E.C.

CLINICAL, PATHOLOGICAL, AND THERAPEUTICAL MEMORANDA.

CONTINUED PARALYSIS OF ACCOMMODATION.

By HAROLD B. GRIMSDALE, M.B., F.R.C.S.,

ASSISTANT OPHTHALMIC SURGEON ST. GEORGE'S HOSPITAL, AND ASSISTANT
SURGEON ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.

In the January number of the OPTHALMOSCOPE, Mr. Sydney Stephenson asks for cases of continued paralysis of accommodation other than those post-diphtheritic in origin.

The following is a case in point: K. D., a schoolboy, aged 11 years, was brought to me in January, 1903, with a history that he had been unable to read his lessons for some weeks. As he was obviously hypermetropic, I examined him under atropine, and found in each eye an error amounting to + 4.0 D, with which connection the visual acuity was normal at a distance. I ordered him glasses, and thought no more of the matter.

In March, however, he was again brought to the hospital for the same reason, *i.e.*, that he was unable to read. I tested his acuity at a distance, and found it still $\frac{6}{6}$, but in reading he could only see Sn. 0.1 at 13 inches: with + 7.0 D., however, he could read Sn. 0.3 easily.

The pupils were active, but the reaction to convergence was perhaps a little less than normal.

The parents were questioned as to any previous attack of diphtheria or other fever, but repeated inquiry could elicit no information on those points.

The boy's previous history had been entirely uneventful. Thinking that there might be some element of neuromimesis or malingering, I again and again examined him, but always with the same results, although I tried to catch him tripping in every way.

The visual fields for white showed no sign of contraction, and there was no abnormal variation of the colour fields. There seemed, then, no evidence of hysteria or of deceit.

Dr. Risien Russell had the kindness to overhaul the boy for me, but could find nothing which would throw any light on the matter. The central nervous system showed no change, and Dr. Russell agreed with me, as a result of his examination, that there was no evidence whatever as to the cause of the affection.

I have seen the boy recently, more than a year after the first observation, and there is no change in the condition. V. A. in each eye is $\frac{6}{6}$ with + 4.0 D. and 0.3 Sn. cannot be read at 13 inches without + 7.0 D.

A METHOD OF UTILISING THE EYELIDS TO IMPROVE VISION TEMPORARILY IN SOME CASES OF AMETROPIA.

By

E. DONALDSON,

SURGEON TO THE LONDONDERRY EYE, EAR, AND THROAT HOSPITAL.

The external coats of the eye, except in very rare conditions, yield a little on pressure, and for every change in the antero-posterior diameter of 0.3mm., the refraction is altered by 1D. These facts lie at the root of the following observations.

The method described below I learned from a patient, and it is a good instance of the devices which patients employ to overcome their disabilities. A boy, aged 17 years, with a myopia of one and a half dioptries, showed me that he could improve his distant vision by putting his finger over the external canthus and drawing the eyelids outwards. This observation I have abundantly confirmed. At first I thought that the improvement was due to the cutting off of diffusion circles by the upper eyelid, but Mr. W. M. Beaumont kindly showed me that pressure was the chief cause in operation (see *Lancet*, vol. ii., 1903, p. 1192). Since I read Mr. Beaumont's paper in the *Ophthalmic Review* for August, 1900, I have made some observations, and found that I had overrated the advantage gained in ametropia by cutting off diffusion circles by the eyelids.

Not only in low degrees of myopia is this method of stretching the lids by the finger useful, but also in astigmatism "against the rule," whether hypermetropic or myopic. By the stretching of the lids the horizontal meridian of the cornea can be flattened, and the improvement in vision in this form of astigmatism is considerable. Anyone by making himself astigmatic by a cylindrical lens can verify this observation. In hypermetropia and in astigmatism "with the rule" stretching the lids is worse than useless.

It may be that this method will prove not merely of theoretical interest, but of some practical value also when put in use in suitable cases, and when lenses are not at hand and a momentary glance with improved vision is desirable. Myopes of low degree and patients with astigmatism "against the rule" will, in my opinion, find the little manœuvre above described much more serviceable to them than approximation of the eyelids, or tilting of the head to one side. The correction, however, leaves something to be desired, chiefly because the lid pressure produces a certain amount of irregular astigmatism of the cornea, as shown by the monocular diplopia accompanying it.

CURRENT LITERATURE.

NOTE.—Communications of which the titles only are given either contain nothing new or else do not lend themselves to abstract.

I.—ANATOMY, PHYSIOLOGY, PATHOLOGY, AND
BACTERIOLOGY.

Sala, P.—Upon changes in the ciliary epithelium in poisoning by naphthaline. (Ueber Veränderungen an den Ciliarepithelien bei Naphthalinvergiftung.) *Klin. Monatsbl. f. Augenheilkunde*, J. XLI (1903), Bd. I., p. 1.

Edridge-Green, F. W.—The physical aspects of a theory of Colour-Vision. *Ophthalmic Record*, February, 1903.

Hess, C.—On congenital cysts of the Eyeball and their development. *Archives of Ophthalmology*, July, 1903.

Paterson, J. V.—Glaucoma and the glaucoma theories. *Medical Press and Circular*, February 17th, 1904.

After describing and criticising the various theories of glaucoma, Paterson points out that there exist two great bars to progress along experimental and pathological lines, namely, (a) that attempts to produce the disease artificially in animals have met with little success, and (b) that affected eyes are seldom removed early in the progress of the malady. The author lays stress on the frequency with which chronic glaucoma is associated with general vascular diseases, and thinks that a careful examination of the circulatory system by modern instruments for investigating blood pressure may throw light on the pathology of the disease.

Goldzieher, W.—Upon congenital Cryptophthalmus. (Zur Lehre vom Kryptophthalmus congenitus.) *Centralbl. f. prak. Augenheilk.*, August, 1903.

A well-developed child, aged ten years, suffering from bilateral cryptophthalmus, fell under Goldzieher's observation. An account of the case and certain general remarks upon the condition are incorporated in the present communication. The parts presented the following appearance: the skin passed uninterruptedly from the forehead to the cheek, without showing any indication of eyebrows. A round mass, about the size of a cherry, evidently representing a rudimentary eyeball, could be felt beneath the skin, but it could not be ascertained for certain whether the eyes were capable of any

sensation of light, although when a strong ray was caused to fall on the bridge of skin, some twitching was observed. Towards the outer part of the lower margin of the orbit there existed beneath the skin on both sides a soft mass (perhaps a cyst or a lipoma), not continuous with the rudimentary eyeball. There was a smooth tuft of hair reaching on either side from the outer angle of the orbit to the temporal region, where it became continuous with the hair of the head. Skull normal. The nose looked like one formed by a plastic operation, and the nostrils were uncommonly narrow, a remark that applied also to the external auditory meatus. The remarkable point about the case lay in the fact that when the child cried, the bridge of skin bulged forwards until tears ran from the nose, when it resumed its normal aspect. From this the author argues that the lacrymal glands were present and active, and that the nasal ducts had a subcutaneous opening whereby the tears were promptly carried away. He also surmises that the conjunctival sac was not wholly absent. As regards the pathogeny of cryptophthalmus, Goldzieher thinks that intra-uterine inflammation must lie at the root of the changes in the eyeball, since no arrest of development could account for the cicatricial tissue and various adhesions that have been found in these cases. Could the ulceration of the superficial tissues of the eyeball account for the absence of eyelids? This question is answered by Goldzieher in the following way: in human beings the formation of the lids commences in the second month. In the third month the cornea is already covered by the lid processes, the adjacent free margins of which become adherent, an adhesion that continues until the seventh month. At the third month, the formation of a conjunctival sac has already taken place, but the eyelashes of the tarsus and the Meibomian glands have only commenced to differentiate, and their formation is complete only when the lids have ceased to adhere. Let it be taken for granted that at the time the conjunctival tract is forming, an ulcerative process destroys the superficial tissues of the eyeball, whereby a considerable loss of substance ensues, which leads to adhesion of the raw surfaces and of the skin covering them. In consequence of these adhesions the formation of the conjunctival tract must cease, since inseparable bands of scar tissue have formed between the eyeball and its cutaneous covering. Inasmuch as the cornea has, so to speak, come to grief, the organs of the lid fail to develop, a fact demonstrated by all cases of cryptophthalmus that have been investigated. Tarsus, Meibomian glands, and cilia failing, the globe is covered by a flap of skin, and not by lids. Further, the embryological impetus to the separation

of the adherent lids is wanting, which arises only when the edges of the lids are fully formed. This view, according to Goldzieher, fully explains not only the absence of lids but also the undifferentiated condition of the skin-covering in cases of cryptophthalmus.

ANNIE T. BARNARD.

Verhoeff, F. H.—Some Remarks on the use of Mallory's Phosphotungstic Acid Hæmatoxylin and a Note on the Musculus Papillæ Optici of Nikolai. *Royal London Ophthalmic Hospital Reports*, vol. 15, part 4, October, 1903.

This method was brought forward as a differential stain for the neuroglia of the central nervous system, a purpose for which it was probably unexcelled. The present writer has found it of great value also for staining sections of the eye, not only for neuroglia but for other tissues also. The method of fixation has been modified, but for the details of this useful means of staining the original paper must be consulted.

The cells of the disc recently described by Nikolai as forming a musculus papillæ optici are deeply stained by this method, and the structure is so well brought out that it renders the view that they are smooth muscular fibres improbable. It seems most likely that they are neuroglia cells, but in a less highly differential form than those of the optic nerve proper. It seems more than probable that the cells are modified spongioblasts, and closely related to Muller's fibres.

C. D. M.

Sulzer.—Experimental study of the sight of astigmatics. (Etude expérimentale de la vision des Astigmatiques.) *Annales d'oculistique*, T. CXXIX (1903), p. 86.

Scott, Kenneth.—The practical testing of colour perception. (L'essai pratique pour la perception des couleurs.) *Annales d'oculistique*, T. CXXIX (1903), p. 269.

Peschel, Max.—On the theory of the Retraction of the Eye. (Zur Theorie der Retraction des Auges.) *Centralb. f. prak. Augenh.*, January, 1904.

In some of the cases of congenital defects in the movement of the eyeballs recently reported there was noticed a retraction of the eyeball into the orbit when certain movements were attempted; and certain authors (Bietti and Axenfeld) have postulated the existence in these cases of a true retractor muscle, probably representing an abnormal insertion in the region of the hinder pole of the defective rectus. The author thinks this assumption unnecessary. He states that usually in these cases the defective rectus is represented by a fibrous strand which does not permit of movement of the eyeball in the opposite direction, but will, of course, permit this move-

ment if the eyeball be drawn deeper into the orbit, thus loosening this band. This retraction is therefore brought about by the combined action of the vertical recti, and represents an adaptation of these muscles to the altered conditions.

A. LEVY.

Rogman.—Perithelial sarcoma of the iris with invasion of the ciliary body. (*Sarcome périthélial de l'iris avec envahissement du corps ciliaire.*) *Annales d'oculistique*, T. CXXIX. (1903), p. 5.

Rogman enucleated the eye of a woman, 38 years of age, on account of a sarcoma of the iris, which a less serious operation (iridectomy) had failed to remove completely. The greatest diameter of the tumour, which formed a mass of irregular shape, was 8 mm. and its smallest 5 mm. It involved the ciliary body and all the iris, except the posterior layer of that tissue. Upon microscopical examination, a difference was found to exist between the tumour as it affected the iris and as it affected the ciliary body. The ciliary tumour was composed of a succession and superposition of cellular layers, separated by connective tissue, which by anastomosis formed a plexus. This tissue included many blood-vessels, in which the column of blood was separated from the neoplastic cells by a simple layer of endothelium only. The sarcomatous cells belonged to the cylindrical type, and were arranged, pallisade-like, along the connective tissue framework of the neoplasm. Pigment cells were few and far between. No signs of degeneration, mucous, hyaline, amyloid, or otherwise, could be found. In the tumour as it affected the iris the above described arrangement could not be made out. The neoplastic cells in that position were fusiform, and disposed in bundles, without any precise order. Vessels were not numerous and pigmentary cells were rare. The angle of the iris included masses of cells apparently separated from the tumour, and these were also found entangled in the cicatrix left by the iridectomy. Towards its centre, the cornea was extremely thin. Rogman concludes that the tumour originated from the iris.

S. S.

Randolph, Robert L.—The rôle of the toxins in inflammations of the Eye. *Bulletin of the Johns Hopkins Hospital*, March-April, 1903.

Abundant evidence exists, according to Randolph, to show that the healthy conjunctiva, like the healthy vagina and the healthy intestine, probably contains bacteria at all times. Of these micro-organisms, the most frequent are the staphylococcus aureus, micrococcus lanceolatus, and micrococcus

epidermidis albus. Most forms of ophthalmia are caused by the multiplication of special bacteria upon or in the conjunctiva. Whatever difference of opinion there may be with regard to the bacterial origin of trachoma, vernal catarrh, and phlyctenular conjunctivitis, there is now no serious dispute as regards the fact that *ulcus serpens* is caused by the pneumococcus, "pink eye" by the Koch-Weeks' bacillus, gonorrhœal ophthalmia by the gonococcus, and sub-acute or chronic conjunctivitis by the diplo-bacillus of Morax-Axenfeld. How do these various organisms produce inflammation of the conjunctiva? Clearly, not by acting as so many foreign bodies, else all organisms would stand on much the same footing, and the inflammation they caused would be in relation to their size and not to their vital qualities. Moreover, that they must be in contact with the conjunctiva for a certain length of time before setting up reaction, tells dead against that view. Micro-organisms, therefore, produce inflammation by manufacturing soluble toxins which in their turn act upon the cells of the tissues. The experimental proof of this theory is, however, difficult. For example, many of the pathogenic organisms found in the eye are peculiar to man. Thus, Randolph has repeatedly tried to obtain a reaction by introducing gonococci into the conjunctival sac of the rabbit, but the result was always negative. At the same time, Heller and Morax and Elmassian have occasionally succeeded in producing a modified conjunctival inflammation by making an abundant inoculation with a very virulent strain of gonococci and by occluding the eye for twenty-four hours after the operation.

We have no precise information as to the chemical nature of bacterial toxins, although the latter are chemical substances capable of filtration, precipitation, and resolution. They are usually complex, and made up of an alkaloidal material and a nitrogenous substance, which is extremely active. At present, these chemically undefined substances can be recognised only by biological tests. Experimental studies upon the part played by toxins in inflammations of the eye have been made by Bardelli, Druault and Petit, H. Coppez, and Morax and Elmassian. Coppez has shown that the diphtheria toxin has a marked action upon the cornea, especially when the anterior epithelium of that structure has been injured. His experiments demonstrate that the tears have no antiseptic influence upon the diphtheria bacillus. The streptococcus toxin and the pneumococcus toxin, on the other hand, have very little action upon the cornea. The toxins of staphylococci, according to Soloviev and Molodovosky, reproduce upon a small scale much the same lesions as the

staphylococci themselves. As regards the toxins of the gonococcus, Koch-Weeks' bacillus, Morax-Axenfeld diplobacillus, and of the staphylococcus, the thirty-eight experiments conducted by Morax and Elmassian show that the mucous membrane of the rabbit's eye reacts under the influence of these toxins much in the same way as the human conjunctiva. The reaction takes two or three hours to develop.

Randolph has made experiments with the toxins of gonococcus, diphtheria bacillus, pneumococcus, staphylococcus aureus, micrococcus epidermidis albus, streptococcus pyogenes, bacillus coli communis, and xerosis bacillus—that is to say, with organisms, all of which, with the exception of the micrococcus epidermidis albus, have been credited with the power of producing inflammation in the eye in some form or other. The toxins were obtained by filtration, although the dead cultures were now and then employed.

Forty experiments were made by dropping the toxins into the conjunctival sac, but once only did the author succeed in exciting a conjunctivitis. The toxins did not damage the epithelium, and perhaps on that account were not absorbed.

Thirty-one experiments were performed by injecting toxins into the conjunctiva, and in every instance a positive result was obtained. It is however possible since some of the organisms employed in the experiments are not supposed to give rise to soluble toxins, that the effect might be due to the irritating bacterio-proteins described by Buchner.

Six experiments were made by injecting toxins into the anterior chamber, and thus setting up iritis and conjunctivitis. The absence of panophthalmitis and of "closed pupil" is explained, Randolph thinks, by the fact that some at least of the filtrates oozed out of the anterior chamber after the inoculation.

Randolph adds a report of his investigations upon the bacteriology of the normal conjunctiva of rabbits based upon nearly fifty experiments. A large sterile platinum loop was rubbed over the ocular conjunctiva and carried into the conjunctival sac. It was then used to inoculate fluid agar; plate cultures were always made. In the result it was found that the healthy conjunctiva of the rabbit, like that of the human conjunctiva, was practically never sterile (one sterile plate in the forty-seven observations). The staphylococcus epidermidis albus was found in thirty-six of the forty-seven observations.

Randolph's conclusions are as follows:—

1. Bacterial toxins, so far as tested, when dropped even for many hours into the healthy conjunctival sac, were found to be incapable of producing inflammation or of causing any other injury.

2. The same toxins when injected into the tissues of the conjunctiva or into the anterior chamber invariably set up local inflammation, the extent and intensity of which varied to some extent according to the species of bacterium yielding the toxin.

3. Bacteria not previously proved to produce soluble toxins were found to produce the latter even in young cultures, and it is suggested that injections of bacterial filtrates into the eye, particularly into the conjunctival tissue, constitute a more delicate biological test for the detection of certain toxins than the tests usually employed for this purpose.

4. The experiments recorded in this paper furnish additional examples in a comparatively new field of the importance of toxins in explaining the pathogenic action of bacteria, and likewise emphasize the etiological significance of injuries of the covering membrane of the eye in favouring the action of toxins and of bacteria.

S. S.

Grossmann, Karl.—The Mechanism of Accommodation in Man. *Ophthalmic Review*, January, 1904.

In this paper the views held by other observers are first stated, and the theories that at the present time have supporters are two: (1) Helmholtz, which states that the increase of curvature of the lens during accommodation is produced by relaxation of the zonule, due to contraction of the ciliary muscle; and (2) Tscherning's theory, which assumes that the increase of curvature of the central portion of the lens is due to constriction and flattening of the peripheral part.

Grossmann's attention was directed to this subject by having as a patient, a young man, aged 26, who had aniridia in both eyes, and small anterior and posterior polar opacities in both lenses. The eyes had six or seven dioptries of hypermetropia besides astigmatism. They were, however, free from glaucoma. When eserine was used, the lenses, which were homogeneously red before, became divided into three zones: an inner one, a darker middle one, and an outer red one: the ring-shaped middle zone was the expression of difference of refraction between the central and peripheral portions. A striking feature is the tremor of the lens which develops when eserine is used, of which not a trace can be seen without it, and under it also the ciliary processes become visible, though no voluntary effort of accommodation is able to bring them into view. The circumference of the lens remains perfectly circular but the equatorial diameter is decreased thus: under normal conditions it is $11\frac{1}{2}$ mm., under eserine it is $10\frac{1}{4}$ mm., and under homatropine it is $12\frac{1}{4}$ mm. The thickness of the lens under

the influence of eserine is increased 1.3mm., the distance between the lens and the cornea decreases $\frac{1}{2}$ mm. and the posterior surface of the lens bulges backwards 0.8mm.

The tremor of the lens is due to the zonule being relaxed, and the lens left somewhat loose, though the lens, as a rule, moves slightly upwards and inwards during accommodation.

By means of the images of the lights reflected from the surfaces of the lens the author concludes that its posterior surface changes during accommodation in exactly the same manner as the anterior surface, and forms a posterior lenticonus with increased curvature of the centre, and flattening of the peripheral portion.

C. D. M.,

Kampherstein.—A case of glaucomatous excavation with retinal filling-up. (Ein Fall von glaukomatöser Exkavation mit retinaler Ausfüllung.) *Klin. Monatsbl. f. Augenheilk.*, J. XLI (1903), I Band, p. 25.

Kampherstein removed an eye from a man, aged 66 years, on account of absolute glaucoma. Upon examination, the iris and lens were in contact with the cornea, so that the anterior chamber was non-existent. The lens was cataractous. The optic papilla and the lamina cribrosa were deeply excavated; the former was completely atrophic. The glaucomatous excavation was filled up with material derived from the retina, and with old blood pigment, but no signs of inflammatory infiltration could be made out. The retina was atrophic, especially as regards its nerve fibre and ganglion cell layers. The retinal vessels manifested very pronounced arterio-sclerotic changes. There were recent preapillary hæmorrhages.

Max P.

Kayser, B.—A contribution to the knowledge of Keratomycosis aspergillina. (Ein Beitrag zur Kenntnis der Keratomycosis aspergillina.) *Klin. Monatsbl. f. Augenheilkunde*, J. XLI. (1903), Bd. 1, p. 50.

The aspergillus fumigatus gives rise to a characteristic form of keratitis, all the recorded cases of which are briefly analysed by Kayser in the present communication. Kayser then reports the case of a countryman, 26 years of age, who was struck in one eye with a bit of wood, an accident followed by slight but persistent inflammation. When examined by Kayser fourteen days after the injury, the left eye showed slight and partial conjunctival congestion, not associated with photophobia or lacrymation. In the lower-outer part of the cornea, about midway between the limbus and the centre of the cornea,

was a circular, dry, scaly, white infiltration, 1.5 mm. to 2 mm. in diameter. It was raised above the level of the rest of the cornea, and surrounded by a shallow, greyish trench, and a zone of infiltration. A bunch of vessels ran towards the lesion from the edge of the cornea. There was no hypopyon. The clinical appearance was reminiscent of a *keratitis fascicularis*. Upon studying the lesion with a Zeiss corneal microscope, a small foreign body, blackish-brown in colour, was detected. The mass was removed, leaving behind a flat, greyish ulcer, which healed in the course of a few days without disturbance of sight. Several kinds of nutrient media were inoculated with the substance, which was then embedded in paraffin and cut for the microscope. The sections, in which remains of the corneal tissue could not be found, showed the mycelium of a fungus: fructification organs could not be recognised. After incubation at 36° C., tubes of agar, gelatine, and serum showed an abundant growth of *aspergillus fumigatus*, and also of a diplococcus, not staining by Gram. The corneæ of several rabbits were inoculated with the *aspergillus*, and in all a typical *keratomycosis aspergillina* was produced. The diplococci were non-pathogenic as regards the cornea of rabbits. The communication concludes with a discussion of the etiology, symptoms, and bacterial associations of this form of disease, which Kayser thinks must often escape recognition.

S. S.

Zentmayer, William.—A case of *Microphthalmos* with orbital cysts, with histologic study, by Harold G. Goldberg. *Annals of Ophthalmology*, Vol. VIII, No. 1, January, 1904.

Based upon a most careful study of the histologic conditions, Zentmayer comes to the following conclusions: in both eyes a tendency towards cystic changes of the imperfectly developed eye is manifest. This is shown macroscopically by the large cysts, and microscopically by the cystic changes in the ocular tunics. The microscopic changes of especial interest are cyst cavities in the nerve fibre layer, regular cystic enlargements composed of the nuclear layers, and fibrous septa extending from the wall of the small cyst into the cavity: all of which the author believes are intimately related. The pressure of the retinal elements in the large cyst walls and the striking histologic resemblance between the lining membrane of the cyst and the normal retina, and its transition into fibres composed of cells similar to those of the ciliary body at a corresponding situation, indicate the tendency towards the formation of a complementary eye.

F. W. MARLOW.

II.—ASEPSIS AND ANTISEPSIS.

Axenfeld.—A mouth veil for the avoidance of infection in eye operations. (Mundschleier zur Vermeidung der Tröpfcheninfektion (Flügge) bei Augenoperationen.) *Klin. Monatsbl. f. Augenheilk.*, Oktober, 1903, and *Zeitschr. f. Augenheilkunde*, Dezember, 1903.

Axenfeld, following the example of many surgeons, recommends that in operations upon the eye one should wear a veil of doubled gauze, fastened to a wire, running from ear to ear under the nose, and hanging down to the chest. Its lower edge is held in place by tapes. Infection by particles of water from the mouth is very likely to occur in operations upon the eye, because the operator has often to speak to the patient or to give instructions to those around him.

Léon, Mendes de.—A source of infection during operation hitherto not sufficiently recognised. *Medical Press and Circular*, January 27, 1904.

Even a taciturn surgeon, it appears, speaks 150 to 248 words during a short operation. Léon shows in a convincing way that there is risk of infecting a wound during operation by particles of bacteria-laden saliva projected from the surgeon's mouth during the act of speaking. He has found that by speaking over agar plates (carefully shielded from atmospheric contamination) he could obtain numerous colonies of micro-organisms, including streptococci and staphylococci, the virulence of which was demonstrated by inoculating a large number of guinea-pigs, white mice, and rabbits. How may this means of infection be avoided? First, by not speaking at all, a thing practically impossible, especially during a difficult or complicated operation. Secondly, by rinsing out the mouth with an antiseptic. Here the difficulty is to find an antiseptic strong enough to kill the organisms without being at the same time too irritating or too poisonous to apply to the buccal mucous membrane. Moreover, Léon has found micro-organisms to be just as numerous upon his agar plates after as before adopting this plan. Third, by adopting masks of single or double gauze. But, according to the author's experiments, there were many colonies of bacteria on the plates when this method was adopted. Lastly, a respirator, containing cotton wool between perforated metal plates, may be worn during operation. This appears to afford the maximum degree of security and comfort, since it totally prevents the exit of microbes from the mouth (as shown by actual experiment) and at the same time does not interfere with speech.

Bach, L.—The importance of bacteriological investigation in operative eye work. (*Die Bedeutung der bakteriologischen Forschung für die operative Augenheilkunde.*) *Zeitschr. f. Augenheilkunde*, Januar, 1904.

During operations upon the eye infection may take place in several ways, as, for example, by the air, the hands or person of the surgeon, eye drops, edges of the eye-lids, conjunctival sac, tear-passages, and, last but not least, by the instruments. Since pathogenic organisms are common in air, the possibility of atmospheric infection is generally admitted. In eye work, nevertheless, the risks of infection from this source are relatively unimportant, as the part operated upon is small, the wounds are of no great size, and the operation is soon over. The hands, an obvious source of infection, must be carefully cleansed by the best methods prior to any operation upon the eye. Even after thorough sterilisation, the hands may be contaminated anew by touching objects that are surgically unclean. In eye work we must avoid as much as possible touching the parts to be operated upon, especially in operations upon the globe. Inasmuch as pathogenic organisms may be present in the mouth, there are dangers about speaking during an operation on the eye. Hence, Bach advises that talking across the wound should be avoided, and, indeed, that conversation should be as limited as may be. Drops of cocaine, etc., used before, during, and after operation, are a source of potential danger. They must therefore be sterilised by boiling after each fresh exposure. Care must be taken to avoid soiling the pipette by touching the lids or the conjunctiva with the appliance, and then replacing the latter in the bottle containing the solution. That the conjunctiva or the edges of the eyelids, whether of normal appearance or not, are to be regarded as dangerous foci of infection has been abundantly proved by experimental work. Pathogenic bacteria, however, may be altogether absent from healthy-looking lid edges, although under other circumstances the reverse is likely to be the case. Thus, many bacteria, some of them virulent, are usually found in diseased lids and conjunctiva, and, under such circumstances, operation must, if possible, be postponed. The skin and other parts surrounding the eye must first be cleansed by antiseptics and by means of agents capable of dissolving fat, and afterwards cleansing of the conjunctival sac and edges of the lids must be carried on by irrigation with physiological salt solution or other indifferent fluid. This is to be followed by repeated blinking on the part of the patient, since it has been shown that blinking is one of the most efficacious ways whereby the conjunctival sac is cleansed. No method yields absolute results in rendering the parts sterile, except perhaps benzine,

an agent that unfortunately is liable to cause pain and irritation. The wished-for goal may doubtless be attained by repeated mechanical cleansing and simultaneous irrigation with concentrated antiseptic liquids, but the relatively delicate nature of the conjunctiva renders this process practically out of the question. The conjunctival sac must be kept dry and free from fluid by the use of sterile pledgets of wool, in order that possibly infective fluid may not be introduced into the eye during the course of the operation.

Instruments, in Bach's opinion, still remain amongst the most dangerous sources of infection, although precautions of some sort are taken by almost every ophthalmic surgeon. Cutting instruments, and those intended to be introduced into the eye, are more dangerous than the others. The indifferent, sterile fluid, in which instruments are usually immersed immediately before they are used, may be a positive source of contamination. For example, Bach has known cases where this liquid had been sterilised one to two days before it was used, thus allowing any spores that might be present time to germinate. The fluid, again, may be contaminated during the progress of the operation by hands, conjunctiva, edges of the lids, or used instruments. Bach insists that instruments should be handled only by those thoroughly familiar with the principles of aseptic surgery. A soiled instrument may be quickly sterilised in a 1:200 solution of cyanide of mercury. Operations upon the conjunctiva are less prone to infection than those upon the cornea, because the former membrane is richly supplied with blood. Operations involving damage to the crystalline lens or vitreous body are specially difficult to keep free from sepsis.

The risk of post-operative infection, which may arise in several different ways, is considerable. It is likely to occur when the conjunctival sac includes many micro-organisms. As already stated, the opening and shutting of the eyelids has been shown to play a most important part in the cleansing of the normal conjunctival sac. Hence, after operation, protection is best secured, not by applying the regulation bandage, but by employing a wire shield or metallic capsule to guard the eye against external injury. But there is still a difference of opinion with regard to this point. Even under a bandage the action of the lid may to some extent be retained. The importance attached by some surgeons to bacteria lodged upon the edges of the lids leads them to keep the parts covered up with antiseptic pads. Bacteriological investigations show, however, that little can be accomplished by such means--disinfecting ointments are more useful in that respect. A bandage is often applied the night before operation for the

purpose of ascertaining whether the conjunctiva is free from morbid secretion. The plan appears to be of service. The simplest way of rendering an operating table free from danger is to cover it with sterilised sheets.

To sum up, Bach recommends, in the course of his communication, the following measures for the purpose of securing asepsis of the wounds made by the surgeon during operations upon the eye. The skin of the eyelids and surrounding parts is treated with soap and lukewarm water, in order to remove grease and coarse impurities. The edges of the lids are carefully cleansed by damp and sterile wool and simultaneous irrigation with lukewarm saline solution, followed by repeated blinking on the part of the patient. This is succeeded by a fresh cleansing of the conjunctiva and edges of the eyelids. The speculum is next inserted between the lids. After that, the eyeball at the point of section is softly wiped with sterile wadding and the parts are irrigated with normal saline solution. Lastly, fluid is removed from the conjunctival sac by means of pledgets of wool, and the operation itself commenced.

S. S.

III.—DISEASES AND INJURIES OF THE EYE AND ORBIT.

Cabaut, Alberto B.—Upon *echinococcus* cysts of the Orbit. (*Ueber Echinokokken-Cysten der Orbita.*) *Woch. f. Therapie u. Hygiene des Auges*. 25 Februar, 1904.

This inaugural dissertation is based upon 75 cases of *echinococcus* cyst of the orbit, which Cabaut has collected from general literature, and upon 35 cases, which have been observed in Argentina. The latter occurred amongst 165,000 eye patients, so that the proportion was as 1 is to 4,714. The disease, therefore, is relatively frequent in Argentina. The eggs of the tapeworm of dogs are taken by man in his food. They are freed from their capsule by the juices in the stomach, and then pass through the capillaries of the intestine into the body. They may develop in various parts of the orbit, but generally lie in or about the muscular cone. They were never present in the optic nerve or the eyeball. Males, aged from 2 to 53 years, were the principal sufferers. The cysts are globular and about the size of a nut. The contained fluid is transparent and aseptic, and in a single case only did it consist of pus. The first symptom is considerable pain, resembling hemicrania, caused by the pressure of the cyst upon the orbital nerves. The tumour is elastic, resistant, and fluctuating. Its growth often comes to a standstill: perforation never occurs. In marked exophthalmos, suppuration of the cornea and eyeball may supervene. "Choked disc" is common.

The sight often improves after operation. Differential diagnosis from tumour is difficult. The so-called "hydatid thrill" is hard to detect. Transillumination and radiography are useful in order to distinguish cysts from exostosis. Exploratory puncture is always necessary, partly to certify diagnosis, and partly to initiate treatment. Echinococcus fluid contains hooklets and an increased amount of saline material; serous cysts contain abundant albumen and epithelial cells; meningocele contains uncoagulable fluid, many carbonates, and few cells or chlorides. The treatment of echinococcus cysts is wholly surgical. Professor Lagleyze divides the conjunctiva at a point between the insertion of two recti muscles, and continues the dissection until he reaches the cyst, the fluid contents of which are then withdrawn by means of a Pravaz syringe. This is followed by incision in the wall and extraction of the latter with forceps. Drainage is not employed, but the conjunctival wound is closed with sutures. Rarely, the spoon must be used. The pericystic wall need not be taken away. The eye itself is invariably spared. The Krönlein operation can be called for only if the cyst is very deeply situated, or if pulsation or œdema of the tissues is present. Electrolysis is not to be recommended. By operating in the way described above, Professor Lagleyze in twenty cases had a single relapse. He has observed spontaneous cure twice.

S. S.

Hansell, Howard F.—Two unusual forms of keratitis, probably rheumatic in origin. *Ophthalmic Record*, November, 1903.

Of the two cases reported by Hansell, the first was probably an instance of "lattice-work" keratitis, while the second resembled a case of superficial punctate keratitis.

Müller, Leopold.—Upon changes in the fundus in miliary Actinomyces. (Ueber Veränderungen im Augenhintergrunde bei miliärer Aktinomykose.) *Klin. Monatsbl. f. Augenheilk.*, J. XLI (1903), Band I., p. 236.

A manservant, 22 years old, was believed to be affected with miliary tuberculosis, a diagnosis confirmed by Müller, who found in the fundus the following changes which were considered to be those of tuberculosis. In the right eye a yellowish-white spot, bordered with pigment, one-quarter the size of the optic papilla, lay beneath a vein near the last-named structure. That the lesion was raised was shown by the bending of the vessel. The media were clear, and the disc normal. Eleven days later, in the right eye four more spots, each equal in diameter to a large vein, were found, while the original spot

had become larger. Moreover, in the other eye, three small spots were visible in the fundus. After death, the general condition was shown to be one not of miliary tuberculosis, as had been supposed, but of miliary actinomycosis. The eyeballs, after hardening, were opened at the equator, and microscopically showed unexpected changes. Thus, the choroid was normal, and the lesions observed during life were found to lie in the retina. They were made up of strikingly large epithelioid cells, the single nuclei of which coloured badly with nuclear stains. The cells had therefore undergone necrobiotic changes. Bacilli could not be found, despite repeated search. The large cells mentioned above, however, tell wholly in favour of a diagnosis of actinomycosis. Müller's appears to be the first case in which changes in the fundus have been demonstrated in miliary actinomycosis. S. S.

Deschamps.—Upon the etiology of polypi of the conjunctiva. (*Sur l'étiologie des polypes de la conjonctive.*) *Annales d'oculistique*, T. CXXIX (1903), p. 429.

In almost every case of polypus of the conjunctiva that has fallen under Deschamps' notice, a small foreign body has been found lodged in the *cul de-sac*, in the vicinity of the point of origin of the growth. The foreign bodies found by the author include hairs from brushes, grains of wheat, wing-shells from beetles, fragments of wood, rose thorns, and pieces of palm leaves. The cases are usually met with in young children.

H. DE V.

Guiot. — Cysticercus of the Eye, Retro-crystalline. (*Cysticerque de l'œil, rétro-cristallien.*) *La Clinique Ophthalmologique*, 10th April, 1903.

Guiot has recently seen two cases of cysticercus in the eye. The first could not be accurately observed on account of vitreous opacity. The one here described, however, was most favourably situated, immediately behind the lens of a child, aged 13½ years. The vesicle, like a bubble of air in a microscope field, moved freely from side to side with movements of the eyes, and gave rise to consequent eclipses of vision. The author prefers not to interfere surgically, unless complications arise.

W. ERNEST THOMSON.

Halben, R.—On Pseudo-Cataract. (*Scheinkatarakt.*) *W. Graefe's Archiv für Ophthalmologie*, 57 (2), December, 1903.

The lenticular affection of which Halben treats under this name has been described by various authors at different times, R. W. Doyne being the first to draw attention to it in 1888. Halben, however, is the first to enter extensively into the pathological and optical properties of this rather important condition,

which is really a central lenticular myopia, consecutive to sclerosis of the nucleus. The clinical symptoms are : considerable apparent opacity of the central portion by focal examination with disproportionate transparency under the ophthalmoscope ; great difference of refraction between centre and periphery, the former showing a considerable amount of "acquired short-sight"—10 diopters, as an average ; the edge of the central opacity lights up strikingly if light is thrown in from the opposite direction, and the central opacity seems to travel in the same direction if the mirror is turned round its axis, thereby producing the appearance of a skiascopic shadow, although in reality an effect only of parallax. Halben could find no histological signs of cataract in his cases, although cataract may eventually supervene. But he found a remarkable alteration of the refractive index of the substance of the lens, the index of the nuclear region being much higher than usual, and the rate of increase from the periphery to the centre, much more sudden. This is most likely due to the nucleus being inordinately dry, as it is also found to be harder and more brittle than usual. Halben then proceeds to explain how these changes would account for the clinical and optical features of this affection, which is perhaps an initial stage of "cataracta nigra." Extraction of the lens has, in Halben's cases, given most satisfactory results. R. GRUBER.

Stephenson, Sydney.—**Tuberculosis of the Conjunctiva.**

Reports of the Society for the Study of Disease in Children.

Vol. III (1903), p. 50.

See OPHTHALMOSCOPE, Vol. I (1903), p. 148.

IV.—THERAPEUTICS, OPERATIONS, INSTRUMENTS, AND APPLIANCES.

Holth, S.—Upon the formation of a round and regular pupil and of a large circle of the iris during tattooing of the cornea ; the advantages which may be obtained from the employment of adrenaline in this operation. (De la création d'une pupille ronde et régulière, et d'un grand cercle de l'iris pendant le tatouage de la cornée ; avantages que l'on obtient par l'emploi de l'adrénaline dans cette opération.) *Annales d'oculistique*, T. CXXX (1903), p. 333.

Holth, of Christiania, gives an interesting account of several modifications he has made in the operation of tattooing the cornea. Since it was shown by Alice Hamilton (*Centralbl. für Bakter. u. Parasit.*, Bd., IV., Abt. II., 1898), that small, encapsuled bacilli were constantly found in Indian Ink, absolute

sterilisation of that material has become the rule. Holth's method is as under: the ink is scraped into a test tube containing about 3 c.c. of water, and the tube is then placed in boiling water for some ten minutes. The eye is rendered anæsthetic by means of cocaine and adrenaline, and the patient is placed upon a table, arranged parallel to the window, the sound eye being next the light, and the surgeon standing on the opposite side, next to the affected eye. The speculum is inserted between the eyelids, but fixation forceps are not used. An ordinary punch, the diameter of which corresponds to that of the other pupil, is pressed on the cornea, so that a small circular groove is made in the epithelium. The epithelium comprised within this circle is removed with a sharp spoon, and oblique punctures are then made into the denuded area with a cataract needle. Hæmorrhage, should such occur, is arrested by cocaine and adrenaline. The tattooing needles (Holth employs four needles in the one instrument) are next moistened with the sterilised ink, and with their aid an intensely black pupil can speedily be obtained. Finally, the parts are irrigated with saline solution, in order to make sure that enough has been done to obtain a good result. If it is wished to imitate the iris, Holth first makes the pupil in the way described above, and then applies to the cornea a larger punch, the lower cutting end of which has a diameter of 11 mm., thereby marking out a larger groove than in the first case. The groove is then blackened, and radii between the two circles are tattooed, as well as the intermediate sectors. By varying the thickness of the Indian ink, and the closeness of the punctures, it is possible to imitate the colour of different kinds of iris. Holth speaks of certain insoluble and indelible colours (black, red, sky-blue, brown, and yellow), which can be obtained in Japan, and thinks that before long they may find their way to Europe.
S. S.

- (1) Imre, Josef.—Sublamin as a disinfectant of the conjunctiva. *Heilkunde*, No. 9, September, 1903, and *Therapist*, November 14, 1903.
- (2) Sublamin in the treatment of Syphilis. *Therapist*, January 15, 1904.

(1) Imre communicates his experiences with "sublamin," a preparation containing mercury sulphate and ethylene-diamine in chemical combination, as a disinfectant in eye work. It has proved to be more efficient than sublimate for disinfection of the hands, since it does not irritate the skin, and yet has great powers of penetration. It is not precipitated by soapy water, and a 1% solution does not affect silver, tin, or smooth nickel. Imre's experiences with sublamin may

be summarised as follows : a 1 % solution was found to be painless and useful in the treatment of the severer forms of conjunctivitis, especially in gonorrhoeal ophthalmia. In the latter disease, ablutions were made every half hour, if possible with everted eyelids. From 50 to 100 grms. of liquid were used at regular intervals during day and night. Irrigations with sublamin have yielded Imre excellent results in ophthalmia neonatorum. In severe cases, however, painting of the conjunctiva with a solution of silver nitrate cannot be replaced even by frequent irrigations with sublamin. Sublamin, in the strength of 1 : 2,000 has been found useful in cases of trachoma. Finally, Imre speaks with approval of sublamin bandages and lotions in cases of severe infectious conjunctivitis.

(2) Subcutaneous or intramuscular injection is the only scientifically unimpeachable way of administering mercury, but unfortunately all the preparations hitherto employed have serious drawbacks. Fifteen syphilitics were treated with sublamin solution (3.4 %), some 280 injections into the gluteal muscles being made altogether. Some of the patients had chancres ; others had papular, tubercular, and ulcerative secondary syphiloderms ; and the rest had syphilitic affections of the mouth, tongue, and larynx. The action of the sublamin was exactly the same as that of the sublimate. But the re-action at the site of injection was in every instance far less marked. Indurations did occur, but they were smaller and softer than those caused by sublimate, and disappeared more quickly. It was also evident that the pain was less. The article concludes with these words : "We therefore possess in sublamin an anti-syphilitic that is readily soluble, does not destroy the injection needle so rapidly, and while as efficient as sublimate, causes less induration and pain."

Darier, A.—Note on the action of Radium as an analgesic and nerve tonic. *Lancet*, March 5, 1904.

Darier has found that radium preparations of low intensity applied to a painful part are often capable of rapidly removing the pain, say, of cyclitis or iridocyclitis. As regards the action of radium upon the psycho-motor centres, Darier has observed cure follow exposure in convulsive neurosis, neurasthenic pseudo-ataxia, and acute facial paralysis.

Rochon-Duvigneaud.—Spring-scissors for the incision of secondary cataracts. (*Une pince-ciseaux pour l'incision des cataractes secondaires.*) *Archives d'Ophthalmologie*, T. XXIII (1903), p. 561.

After a brief description of the various instruments used to divide "after-cataract," Rochon-Duvigneaud professes

his personal preference for scissors. He then gives an account of a modified pair of spring scissors, the blades of which are so curved as to divide the membrane with ease, even although it lies in contact with the cornea after the escape of the aqueous humour. Instrument made by M. Collin.

H. de V.

(1) Neustätter.—Aspirin in eye work. (Aspirin in der augenärztlichen Praxis.) *Münch. med. Wochenschr.*, No. 42, 1903.

(2) Winkelmann.—An untoward effect of Aspirin. (Aspirin-Nebenwirkung.) *Münch. med. Wochenschr.*, No. 42, 1903.

(1) The experiments of Neustätter with aspirin extend over a period of $2\frac{1}{4}$ years. As a means of producing diaphoresis it was employed in doses of 0.5 to 1.0 gramme in all acute and chronic inflammatory affections of the interior of the eye. In order to obviate stomachic irritation due to the insolubility of the remedy, Neustätter administered with aspirin one or two glasses of hot lemonade or of other indifferent fluid. The specific action of aspirin is directed against eye troubles of rheumatic or gonorrhoeal origin, such as iritis, neuritis optica, muscular paresis, episcleritis, and scleritis. In such cases Neustätter employed large doses (2 to 5 grammes a day). The analgesic and hypnotic action of the drug proved useful in the affections named above, as well as in parenchymatous keratitis, neuralgia, glaucoma, and the headache caused by eserine. In cases where the bodily temperature was increased, this was considerably reduced by the profuse sweating brought on by aspirin. With regard to unpleasant complications as the result of giving aspirin, ringing in the ears was set up once, and once there was slight disturbance of digestion in a patient who had previously suffered from indigestion. Provided one gives 0.5 gramme doses of the tablets prepared by the Bayer Company, the cost of aspirin scarcely exceeds that of salicine. On the other hand, in Neustätter's experience, aspirin exceeds salicine as regards its curative powers, while it is much more pleasant to take.

(2) After a couple of doses of 1 gramme each of aspirin Winkelmann observed an eruption upon the extremities, which disappeared in thirty-six hours without further trouble.

Zeitschr. f. Augenheilkunde, Dezember, 1903.

Ovio, G.—Upon stenopaic spectacles. (Sugli occhiali stenopeici.) *Annalia di Ottal*, 1903, Vol. 32, Fas. 7—8, p. 429.

The article by Ovio, with seven figures in the text and one plate, is very complete. It begins with an historical *résumé*, relates numerous personal experiences, and ends with remarks that may be tabulated as follows :—

1. One may reduce to a minimum the disturbance of vision caused by the removal of light and diffraction phenomena due to ordinary stenopaic spectacles.

2. The inconvenience caused by a narrowing of the visual field is remarkable, even with a hole so small as 1 mm. Much less inconvenient from this point of view are stenopaic slits placed horizontally or even Heilborn's spectacles.

3. The stenopaic hole applied to both eyes interferes with binocular vision because the two images of the holes change their positions, etc. The appreciation of distance, relief, etc., is very difficult, while the eyes are furnished with the stenopaic hole.

4. Stenopaic spectacles in the form of a shell are preferable to the flat form, since the former protect the eyes from light falling in from the sides.

5. The stenopaic hole furnishes the clearest images when it is employed to compensate an error of refraction, but it presents the inconvenience of narrowing the visual field unduly and of disturbing vision considerably when it is used for both eyes. The stenopaic slit gives a much larger visual field, which is very useful when the slit is horizontal, but it does not compensate errors of refraction nearly so well. Heilborn's spectacles (plaques having holes at least $\frac{1}{2}$ mm. in diameter arranged in concentric series) do not reduce the visual field, dispensing with all abnormal movements of the head during reading, since the eye at each excursion finds a hole opposite to its visual axis, cutting off a moderate amount of light, which is sometimes an advantage. Heilborn's spectacles, however, present the inconvenience of producing polyopia, which causes the greater inconvenience, as it continually varies with every movement of the eyes and with every change in the diameter of the pupil.

6. The best size for the stenopaic hole is 1 mm. in diameter. If smaller it would diminish unduly the amount of light reaching the eye and the extent of the visual field; if larger it would fail to compensate a more or less considerable error of refraction.

In conclusion and without affirming anything absolutely, it may be said that stenopaic spectacles are able to give assistance in high myopia by adding Heilborn's *plaques* to concave glasses of medium strength. This expedient is really useful for reading, all the more so as we have to deal with patients who have for long abandoned binocular vision. Another useful application would be in cases of more or less irregular astigmatism, or in semi-transparent corneal nebulæ (to avoid diffusion), or, lastly, in large or irreducible pupils (paralysis of the sphincter), coloboma, iridectomy, etc.

A. ANTONELLI.

Arlt, F. R. von.—The results obtained with Cuprocitrol in trachomatous Conjunctivitis. (Le Cuprocitrol et son emploi dans la conjonctivite trachomateuse: résultats obtenus.) *La Clinique Ophthalmologique*, juillet, 1903.

Copper citrate, it appears, was obtained by Guy-Lussac in the year 1836. It includes 32.5 per cent. of copper and 1 part is soluble in 9,143 parts of distilled water, and in 7,700 parts of a solution of sodium chloride at a temperature of 36° C. Arlt gives the name "Cuprocitrol" to a mixture of finely divided cupric citrate with the glycerine ointment of the Austrian Pharmacopœia. This mixture forms a salve, of a turquoise-blue colour, which can be kept in a glass pot for a year without undergoing alteration. A morsel of the ointment is placed in the conjunctival cul-de-sac with a small glass rod, and is then well distributed over the parts by means of light massage practised through the eyelids. If applied by the surgeon himself, the medicament is placed in the superior cul-de-sac, the upper lid having first been everted. The application is repeated two or three times a day, and on each occasion is followed by massage for thirty seconds. A 5 per cent. strength is used to begin with, but, later, this is replaced by an ointment containing 10 per cent. of copper citrate.

Arlt finds cuprocitrol useful in all cases of trachoma where the solid "bluestone" would ordinarily be employed. It acts equally well in recent and in long-standing trachoma, associated or not with pannus, facettes of the cornea, thickening of the palpebral conjunctiva, papillæ, cicatrices, or shortening of the conjunctival fornices. On the other hand, it does not suit the mixed forms of trachoma, and especially those accompanied by eczematous conjunctivitis or associated with marked secretion, advanced corneal lesions, or ciliary irritation. The new remedy is stated to be neither irritant nor caustic, to cause no pain, and not to compel the patient to leave his ordinary occupation. It presents the additional advantage that its application can be carried out at the patient's home, a point of some importance when the sufferer lives at a considerable distance from the doctor. Lastly, it may be mentioned that in 1902 Professor Fuchs tried cuprocitrol in nineteen cases of trachoma, in only one of which the agent was not well tolerated. Fuchs has since then employed the remedy on a much more extensive scale.

A. DARIER.

Goldschmidt, Bruno.—Renoform. *Die Therapie der Gegenwart*, Juli, 1903.

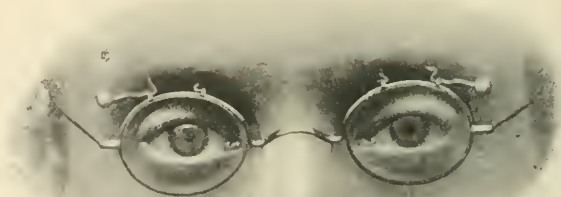
Renoform is a fluid extract of the active principle of the supra-renal bodies, manufactured by a firm of Berlin chemists.

It is recommended by Goldschmidt as a cheap, active, and non-irritating substitute for adrenaline.

IV.—MISCELLANEOUS.

Spectacle Frames for Ptosis. *Lancet*, February 27th, 1904.

These spectacle frames, intended for the relief of ptosis without operation, are made by W. F. Stanley & Co., Railway Approach, London Bridge, S.E. Small spring supports are fitted to the upper borders of the lens frames, so as to keep up the drooping eyelids. The illustration shows the spectacles in use. They are the invention of Dr. Donald.



Finlay, C. E.—Delirium after Eye operations. *Archives of Ophthalmology*, Vol. XXXIII, No. 1, January, 1904.

Finlay reports a case which, in his opinion, confirms the views which were enunciated by Fromaget, of Bordeaux, in a paper published in 1900 in the *Annales d'Oculistique*, namely, that such delirium is the result of an autointoxication which is most frequently uræmic, and due to an accumulation of excrementitious products in the system from renal insufficiency.

The patient was a pale and weakly Italian, whose urine, upon her admission to the hospital, presented a trace of albumin. She was operated upon for cataract of left eye, both eyes being bandaged. The same night she became violently delirious, tearing off bandage, etc. Morphine made her worse. Systematic examination of the urine showed great diminution in quantity of the fluid, and the proportion of urea considerably diminished. Daily examinations of the urine were made for a period of thirteen days, showing great variations in the quantity, and some in the amount, of urea. Upon the whole, however, there was an increase in the urea, the total amount of urine always remaining greatly below that of normal. On the fourteenth day, the right eye was operated upon, one eye only being bandaged. Bromide of potassium was

administered internally. For one night the patient was nervous, but had no delirium. No atropine was used in either eye. The author thinks that the fear of the operation with the mental shock of the latter may act the part of the "last straw" in inducing a renal insufficiency in a patient with prior kidney lesion. He believes that the influence of bandaging both eyes was secondary, and of the same importance as the psychic influences. F. W. MARLOW.

Jones, Charles D.—The Retinal Image. *Ophthalmic Record*, July, 1903.

Stillson, Hamilton.—Some remarks on the influence of environment on the eye. *American Journal of Ophthalmology*, December, 1903.

Burnett, Swan M.—Astigmatism or Astigmatism—which? *American Journal of Ophthalmology*, December, 1903.

Heilborn, Franz.—On venereal diseases of the eye in the innocent. (Ueber venerische Augenerkrankungen Unschuldiger.) *Wochens. f. Ther. u. Hygiene des Auges*, 28 Januar, 1904.

A widow, aged 48 years, developed gonorrhœal ophthalmia in one eye. Her grand-daughter, aged 3 years, suffered coincidently from gonorrhœal vulvo-vaginitis, unassociated with signs of defloration. The connecting link between the old lady's gonorrhœal ophthalmia, on the one hand, and the child's gonorrhœa, on the other, was found to be the mother of the child, a woman aged 21 years, who was herself affected with gonorrhœa of the ordinary type. The mother and the child occupied the same bed, and the grandmother had used a towel for the dual purpose of cleansing the child's genitals and of wiping her own face. S. S.

Jacoby, George W.—The sign of the orbicularis in peripheral facial paralysis. *Journal of Mental and Nervous Disease*, October, 1903.

This sign lies in the inability of a hemiplegic voluntarily to close the eye upon the paralysed side, except in conjunction with the other eye. As the result of his studies, Jacoby has reached the following conclusions: (1) The statement of Bard, that the sign is invariably lacking in peripheral facial paralysis and is therefore a distinguishing mark of central affection, is incorrect. (2) The existence of the sign in peripheral paralysis is further proof of the existence of commissural fibres between the nuclei of the seventh nerves. (3) The sign is of clinical value in so far as its presence in peripheral paralysis shows that complete recovery has not yet occurred.

(4) The secondary over-action in the orbicularis palpebrarum, which is late in appearance and always coincides with some recovery in power, does not occur in those cases in which the sign having been present has passed away.

Ellett, E. C.—Notes from the clinic of Dr. Galezowski. *Ophthalmic Record*, November, 1903.

Le Fever, C. W.—Deficient dynamics of the extra-ocular muscles. *Ophthalmic Record*, November, 1903.

Meige, Henry.—Les tics des yeux. *Annales d'oculistique*, T. XXIX (1903), p. 167.

Bichelonne.—Considerations upon the simulation of concentric contraction of the visual field (Considérations sur la simulation du rétrécissement concentrique du champ visuel.) *Annales d'oculistique*, T. CXXIX (1903), p. 252.

Schenk, G.—Sanguineous lacrymation due to hæmorrhage from the naso-lacrymal duct. (Blutige Tränen durch Blutung aus dem Ductus nasolacrymalis.) *Klin. Monatsbl. f. Augenheilk.*, J. XLI (1903), Band I, 481.

Schenk, of Rosenberg, was hurriedly called to an old man, who had often suffered from obstinate epistaxis. As much blood had been lost when Schenk got to the patient, the left nostril, whence the hæmorrhage came, was plugged in front with gauze soaked in alum solution, and afterwards a second plug was inserted, a distance of about 3 mm. separating the two tampons. After the operation had been finished, the throat gargled, and the parts cleansed, watery blood was seen upon the patient's left cheek. The blood was found to come from the left eye. Schenk assumes that the source of the bleeding lay in the immediate neighbourhood of the lower end of the lacrymal duct between the two plugs that had been inserted, and that during the act of swallowing, blood was forced up the nasal duct, and appeared in the conjunctival sac under the guise of blood-stained tears.

MAX P.

Sommer, G.—Congenital absence of psychical and reflex weeping. (Angeborener Mangel des psychischen und reflektorischen Weinens.) *Klin. Monatsbl. f. Augenheilk.*, J. XLI. (1903), Band I, p. 482.

A child, aged about $2\frac{1}{2}$ years, was brought to Sommer with the information that the child had never shed tears. In proof of this statement it was said that when he was badly burned some time before, neither the injury nor the subsequent dressings, although very painful, had made him cry. Tear passages, conjunctiva, fundus, and salivary glands normal. Repeated experiments with onions, calomel, and other irritating agencies

showed that tears were not secreted—a mere dampness of the eyes was all that could be produced. The internal administration of jaborandi effected no change in the condition. The child died when aged 2 years and 10 months, and for some little time before death the mother noticed a scanty secretion of tears. With the exception of a case described by Morton (Wilbrand-Saenger *Neurologie*, II., s. 24), where there was unilateral absence of tears, Sommer is aware of no case resembling his own.

S. S.

Mitchell, John R.—Report of a case of familial tremor of the head. *Journal of Mental & Nervous Disease*, March, 1903.

Following a period of overwork, a student, 22 years of age, developed a slight lateral tremor of the head—rapid and almost constant. It could not be stopped voluntarily. There was myopic astigmatism, very imperfectly corrected. The patient's mother had developed a similar tremor of the head at 22 years of age; his maternal grandfather was affected at 40 years of age; and his maternal great-grandfather exhibited the symptom at 70 years.

Hirschberg, J.—Contributions to the prognosis of malignant tumours of the choroid. (Beiträge zur Prognose der bösartigen Aderhautgeschwülste.) *Berliner klinischen Wochenschr.*, Nos. 4 and 5, 1904.

Hirschberg discusses the justifiability of operative measures in malignant tumours of the choroid. Twenty-five years ago Bernhard v. Langenbeck reached the conclusion that operation was worthless, inasmuch as all his patients died from metastasis. Since then statistics have shown an increasing number of what may be regarded as cures. Operation may be beneficial in two ways: first, by prolonging life; secondly, by sparing the patient painful symptoms due to the pressure of the neoplasm. Metastatic growths occur most frequently in the liver, but there may also be local recurrence. In reference to the latter contingency, Hirschberg cautions practitioners against exploratory incisions, since such have several times been the site of local recurrence. Death from metastasis occurs, on an average, two-and-a-half years after operation. Generally speaking, operation may be regarded as successful if there are no signs of metastasis or local recurrence after an interval of four years. Metastatic growths, however, obey no exact laws, and the author quotes the case of a woman who, nine years after removal of the eyeball for melanotic sarcoma of the choroid, consulted a medical man on account of recent pain and swelling of the abdomen. After her death, which took place a month later, melanotic growths were found in the liver, pancreas, and myocardium. On the other hand, death from metastasis

sometimes occurs a few months after an enucleation performed early in the first stage of the disease. The statistics of collected cases vary much, since many patients are lost sight of, and, further, sufficient time may not have elapsed to form a trustworthy opinion upon the case. Fuchs, in 235 collected cases, gives 6% of permanent cures; Freudenthal, in 26 cases, gives 37.5% of permanent cures; Pawel, in 89 cases, gives 57% of complete cures; and Lawford and E. Treacher Collins, in 85 cases, give 25% of permanent cures. Hirschberg himself, in the decade ending in 1882, amongst his own patients, gives 25% of cures, and in the decade just ended, 50% of cures. He considers that the success of the operation depends largely upon the stage at which it is performed. 60% of his operations have been in the first or non-inflammatory stage; 20% in the second or stage of inflammation and high tension; 10% in the stage where the growth had become external. Hirschberg has never knowingly operated in the fourth or stage of metastasis. Hirschberg, finally, expresses his opinion that surgeons are justified in urging their patients to operation at the earliest possible moment. Sarcomata of the choroid are generally melanotic, but non-pigmented and slightly pigmented tumours also occur. Children are not subject to sarcoma of the choroid; in them malignant disease attacks the retina. The prognosis in children after operation is very favourable.

ANNIE T. BARNARD.

Colburn, J. Elliott.—Clinical experiences in the treatment of phorias and tropias. *American Journal of Ophthalmology*, June, 1903.

NOTES AND ECHOES.

International
Congress of
Ophthalmology.

AN advance copy of an amended circular respecting the tenth international congress of ophthalmology, which, as readers know, is to meet at Lucerne in September next, has just reached us. From it we gather that some important alterations have been made. For example, the date of the meeting, "in compliance with the request of numerous foreign colleagues," has been advanced by a week. The congress will assemble on September 13th, 14th, 15th, and 16th, instead of on September 19th, 20th, and 21st of that month, as already announced (see OPHTHALMOSCOPE, September, 1903). Professor Siegrist, of the University of Berne, will replace Professor Pflüger on the executive; and Dr. E. Landolt, of Paris, has been elected a Vice-President of the Congress. Members who wish to secure accommodation at Lucerne are advised to apply, before September 1st, to Dr. F.

Stocker, who will engage a room at one of the best hotels for the very moderate charge of five francs a day, early breakfast included. Further information can be obtained from Mr. W. H. Jessop, Mr. H. R. Swanzy, or Dr. George Mackay, the correspondents for England, Ireland, and Scotland respectively.

* * * *

British Medical
Association, Oxford
Meeting, 1904—Section
of Ophthalmology.

SOME details of the forthcoming meeting of the British Medical Association have already been given in our columns (see OPHTHALMOSCOPE, January, 1904.) Three discussions have been arranged in the section of ophthalmology. 1.—Retro-ocular Neuritis. To be opened by Mr. R. Marcus Gunn. 2.—Intra-ocular hæmorrhage and systemic disease. Dr. Hill Griffith. 3.—Keratitis profunda. Mr. W. T. Holmes Spicer. The papers of the respective openers of the discussions will be ready for publication in May next, and will then be available for those who arrange to attend the meeting. This will be a great convenience for members who intend to take part in the discussions, and as such is to be commended to the serious attention of those who have to do with the organisation of scientific meetings of this sort. Upwards of fifty well-known ophthalmic surgeons have already promised to be present at the meeting, and the three official guests of the Association, accredited to the section of ophthalmology, are Professor J. Hirschberg (Berlin), Dr. Émile Javal (Paris), and Dr. C. A. Oliver (Philadelphia, U.S.A.). It would be difficult to make a more representative choice. Amongst the communications promised are the following:—

1. Short Note on Two Cases of Disease of the Canaliculi. Dr. A. H. Benson.
2. (a) On Glaucoma and Glaucoma operations. (b) On Visual Efficiency after Accidents to Sight from the Point of View of Employers' Liability. Dr. G. A. Berry.
3. The Operative Treatment of High Myopia. Mr. W. Adams Frost.
4. Reforms in the Notation of the Acuteness of Vision. Dr. Émile Javal, Paris.
5. (Title not yet announced). Mr. W. H. H. Jessop.
6. Sepsis and Intra-ocular Inflammations. Mr. W. Lang.
7. The Temperature of the Cornea and its Relation to Corneal Therapeutics. Dr. Angus McGillivray.
8. Upon the Maturation and Extraction of Senile Cataract. Professor M. McHardy.
9. Conclusions as to the Vision of Birds based upon a Consideration of Mimetic Colour and Pattern in Insects. Professor Poulton, F.R.S.
10. Visual Acuity in Savage Races. Dr. W. H. R. Rivers.

11. (A subject bearing upon Glaucoma). Mr. Priestley Smith.
12. Ophthalmoplegia Externa. Dr. James Taylor.
13. Paracentesis of the Cornea for the Relief of Tension
Consequent upon Tearing Opaque Capsule. Mr. T.
Pridgin Teale.

* * * *

Retirement of Dr.
D. Argyll Robertson.

THERE is always a pathetic note about the retirement of a leading man from the active service of his profession. It is small consolation to know that there are other and able men ready to fill the gap. It is given to a small number only to leave behind them names with the classic stamp that will linger on through many, perchance through all, the coming generations. Dr. D. Argyll Robertson, of Edinburgh, has apparently attained the dignity of eponymic eternity, unless, indeed, our descendants adopt some more epexegetic method of nomenclature. That distinguished ophthalmologist, as many of our readers doubtless know, has determined this spring to retire to the mild and charming island of Jersey. In many ways Dr. Argyll Robertson is an admirable Crichton. Tall, handsome, popular, an excellent linguist, he has always been a notable athlete, and has been a prominent member of the Royal Bodyguard of Scottish Archers, one of the most ancient and honourable corporations in the United Kingdom. Born in 1827, he graduated M.D. of St. Andrew's in the year 1857, when just thirty years of age, and became a Fellow of the Royal College of Surgeons of Edinburgh in 1862. For many years he held the post of Honorary Surgeon Oculist to her late Majesty Queen Victoria, a position which he still retains in the Scottish Court of King Edward.

* * * *

Dr. Argyll Robertson's chief work has been done in the Royal Edinburgh Infirmary, where for many years he filled the post of Ophthalmic Surgeon. He was also Lecturer on Diseases of the Eye in the University of Edinburgh. From 1893 to 1895 he occupied the distinguished position of President of the Ophthalmological Society of the United Kingdom, of which Society, by the way, he was an original member. His most important scientific contributions include "The Calabar bean as a new ophthalmic agent," (1863) and "Eye symptoms in spinal disease" (1869 and 1870), which were published in the *Edinburgh Medical Journal*. The first-mentioned paper had much to do with the general adoption of eserine as a mode of treating glaucoma, and the second to the widespread recognition of the so-called "Argyll Robertson pupil" as a sign of locomotor ataxy and of general

paralysis of the insane. That symptom is generally spelt, or rather "misspelt," with a hyphen between the two names. To be accurate, there should be no hyphen between the two names—in other words, Argyll is a Christian name and not one half of a double-barrelled surname. It must be admitted, however, that there is every excuse for the writer or printer's reader who inserts the hyphen, as it refers at once both names to their proper place as qualifying adjectives.

* * * *

Radium.

RADIUM is naturally exciting widespread interest in all branches of the medical profession. As abstracts in our columns have shown, it has not so far achieved much in eye work, whatever revelations the future may hold in store for us. In the course of a popular lecture delivered early in the present month at Folkestone, a certain Mr. Arnold Ulyett professed his belief that radium will prove of great use in detecting diseases of the eye. Radium renders itself luminous to the retina through a closed eyelid or through a cataract. In the latter case a surgeon would be justified in removing the opaque lens. This statement of Mr. Ulyett's amounts to nothing in particular, inasmuch as a similar result can be got by a simple ray of light from a candle projected from an ophthalmoscopic mirror. Mr. Ulyett, who is apparently not a medical man, has hit upon the old familiar "projection of light" test, known to the veriest tyro in ophthalmic surgery. Alas! poor Ulyett. One comfort is that the information about the radium is not likely to set up a great demand for that strange and eccentric metal amongst the blind of Folkestone. It is too costly a luxury to be used as a mere means of testing the sensitiveness of a retina when the same thing can be done by a candle and a mirror.

* * * *

The Optician
Question.

THE opticians, although they never get much further in argument, yet keep on their practical road to the acquiring of their precious qualifying diploma. There is one crucial point about the optician who prescribes glasses, and that is, his incompetence. He is incompetent because he cannot use mydriatics. Without mydriatics and cycloplegics refraction cannot be practised efficiently. That is the first and the last word. Unless the spectacle makers take the next logical step and empower their optician *diplômates* to use mydriatics, they are spiked on the dexter horn of a dilemma. Their *diplômates* may legally test sight and order glasses, but they may not use mydriatics, without which refraction cannot be carried out. The value of a diploma under such circumstances

is that of Hamlet with the part of the noble Dane omitted. It is a locomotive without a boiler, a rifle without a stock. Some day the great indolent, apathetic, lazy, careless, good-natured public will recognise the real state of matters. Then exit the sight-testing spectacle makers amid a burst of inextinguishable laughter. It would take the pen of a Rabelais to do justice to this shopkeeper who apes the dignity and emoluments of a learned profession.

* * * *

Radiography.

THOSE who work with the X-rays are acquainted with the conjunctivitis sometimes set up by exposure to the focus tube. The more common result is a tinea-like inflammation of the edges of the lids. One X-ray operator of our acquaintance, who has a pronounced idiosyncrasy against the focus-tube, has presented a peculiarly blear-eyed appearance ever since he entered into that particular field of work. Just as the dermatitis produced by the focus-tube exposure may vary in degree from a slight redness to a deep and dangerous slough, so, it may be reasonably assumed, may vary the conjunctivitis. The membrane, however, is so protected by either the shut or the blinking lid that dangerous effects are unlikely. For all that, it is well to be cautious in exposing healthy conjunctiva to the focus-tube. The marvellous therapeutic effect of the tube upon some cases of trachoma must be seen to be believed. *Crede experto.*

* * * *

Gratuitous Work.

THE amount of work that many people expect to get for nothing is simply amazing. At a Birkdale Education Sub-Committee meeting in January a lady member called attention to the necessity of looking after the bodily well-being of the children. She stated that the Blackburn Education Committee had appointed a medical man to examine the eyes of the school children, and that out of nearly 9,000 children it was found that nearly one-half suffered from defective eyesight. Fired with emulation at this result, the lady economist of Birkdale suggested they should invite some qualified oculist to make a tour of the children in their schools gratuitously. The delightful *naïveté* of this proposal in reality forms a delightful sarcasm on the foolishness of the medical profession, which is always ready to "spoil the market" by gratuitous service to all and sundry. The public has learnt to expect gratuitous and ill-paid work from medical men, an attitude that must sooner or later bring down disaster upon the heads of an honourable profession. Meanwhile, let our readers beware of Birkdale.

* * * *

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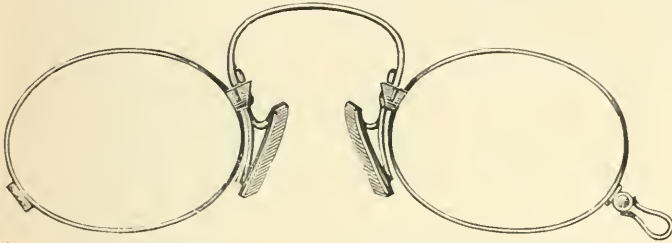
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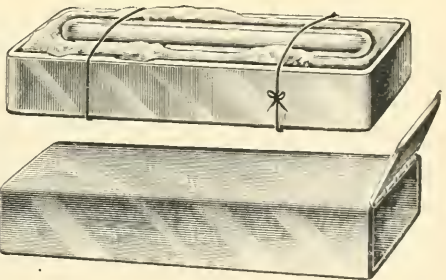
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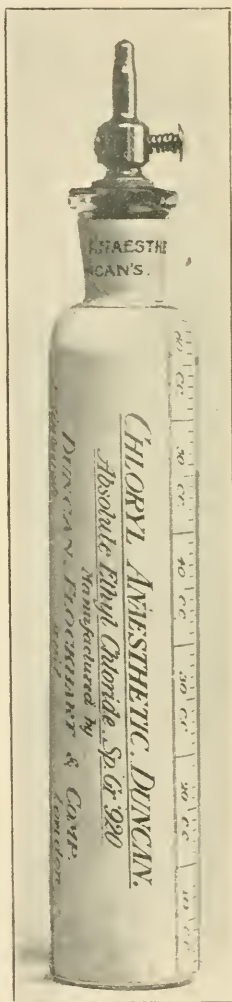
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Inflate the face pad, but not too tightly.

Having first removed the plug, insert the nozzle of the stopcock directly into the supply tube of the Inhaler.

Press the spring tap, which will at once allow the anæsthetic to be discharged into the bag of the Inhaler.

The exact dose can be easily measured by watching the level of the liquid against the graduated measure on the side of the cylinder.

Replace the plug, and immediately proceed to give the anæsthetic.

Anæsthetists say that the best results are obtained by exclusion of air.

PURE Ethyl Chloride does not affect the rubber bag.

To use the 3 or 5 c.c. Glass Capsules.

With the No. 1 Inhaler, hold the capsule vertical, and snip off the top of the neck. **Invert the Inhaler** and place the neck of the capsule in the little tube, from which the plug has been removed. Quickly turn over the Inhaler, when the contents of the capsule will instantly enter the bag. Replace the plug before proceeding to anæsthetise.

With the No. 2 Inhaler, remove the metal cap with plug. Insert the Capsule into the stellate hole and press down. When the neck is broken, and the contents discharged, remove capsule and replace the cap.

The broken end of the Glass Capsule is caught by a small wire sieve, and does not enter the bag.

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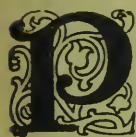
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